EXPERT PERSPECTIVE:

DOUGLAS SPOTTED EAGLE

For Douglas Spotted Eagle, life knows no boundaries other than the ones that aren't faced head on. He's been able to meld his passions for music, video, and skydiving into a multifaceted career. As a preeminent Native American flute player, he's won Grammy Awards, and as a commercial skydiver and video producer, his work has been seen on Discovery Channel, Food Network, and HDNet. His expertise as a renowned educator has led to speaking engagements at countless professional conferences and events.

For most, any one of those vocations would be enough to occupy a lifetime. For Spotted Eagle, marrying his interests seemed natural. "In the technical world I live in, it's always about speed," he explained. "Everything's about being faster. Faster rendering times. Faster creativity. That theme seems to lend itself to jumping out of airplanes, making music, and producing videos."

Video Production at 300 mph

"Camera flying and aerial cinematography are highly specialized skills that are not on every camera operator's résumé," Spotted Eagle said. "What's exciting is that I can take a skydiving video project from planning through completion—write, score, shoot, edit, and deliver it using a file-based production workflow. What makes that possible is computing horsepower, RAM, and software that's finely tuned to deliver incredible performance."

Sony Vegas* Pro is Spotted Eagle's nonlinear editing (NLE) software of choice. Vegas is a native 64-bit application that features real-time multitrack video and audio editing, resolution-independent time lines, complex effects and compositing tools, 24-bit/192 kHz audio support, VST and Microsoft DirectX* plug-in support, and Dolby* Digital surround sound mixing.

"We run Vegas on a couple different Intel® dual- and quad-core processor-based workstations," Spotted Eagle said, "but curiously enough, I just bought a new Apple MacBook* Pro with an Intel® Core™ i7 processor Extreme Edition. Using Boot Camp*, I'm able to run Vegas under Windows* 7. With the horsepower of the [Intel®] Core™ i7 processor and a full complement of RAM, I'm able to work with time-lapse footage shot with a Canon [EOS*] 5D Mark II DSLR at full frame rate, full 5K resolution directly off the memory card from the camera. There's no time lost transferring footage from the camera to the computer."

Spotted Eagle's choice of camera depends on the nature of the project. "I shoot a lot with the Sony PMW-EX1 on the air and on the ground," he said. "I just started experimenting with Sony Alpha-NEX* DLSR cameras. They're nice small form-factor cameras."

Spotted Eagle's VASST—Video Audio Software Support Training—production team also uses Sony professional video cameras that shoot XDCAM* and XDCAM HD format footage. "They're great for both ground and aerial shoots for commercial work, but we reserve them for higher-budget projects," he said. "It's fair to say that we've transitioned to mid-size and smaller camcorders. I use Sony CX*-series camcorders for most of my aerial work now. They're ultra-lightweight AVCHD camcorders that are just the bomb."

Camera flying—the art of shooting videos of other skydivers—usually involves a single helmet-mounted camera. Commercial aerial cinematography takes that concept to a different level. Spotted Eagle's helmet can hold up to four cameras. He typically mounts four, but sometimes mixes it up by using two video cameras and a single DSLR camera. But he doesn't stop there.

"I jump with a Canon 7D that can be used as either a still or motion video camera," Spotted Eagle explained. "And I'll mount two Sony CX100s on the sides—one forward-facing, the other rear-facing. Sometimes I'll add a GoPro*, which is a small AVC camera, to each wrist, on my chest, or on a toe. Other times, I'll put one on the parachute itself to get an inside view. People might think a [USD] 300 camera has no place in a professional shoot, but they offer better quality than what we were shooting with DV-format cameras 10 years ago."

Shooting with a variety of cameras means wrangling a variety of HD video formats and frame rates. Vegas enables Spotted Eagle to work with all that mixed-format footage on a single time line. More important, with its native format support Spotted Eagle can enjoy the full benefits of a file-based workflow. As he put it, "One of the benefits to file-based workflows is that you no longer have capture time. Capture time in linear, tape-based workflows was one-to-one. If you had an hour of content, it took an hour to capture from tape.

"With NLEs that don't offer native format support," Spotted Eagle continued, "you can't work with the original file. It needs to be converted to an intermediate, lower-resolution codec like CineForm or Apple ProRes. That conversion takes time. Vegas lets me work natively with all this different format content. In fact, if you look at my system, you'll see a CompactFlash* card, a Memory Stick PRO Duo*, and an SD card in the same reader. In many cases, I'm editing directly off the cards. I don't even have to transfer the files to my computer's hard drive."

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— Douglas Spotted Eagle

Spotted Eagle uses memory cards to shuffle dailies. "It's a huge time-saver," he explained. "When you come off a shoot and want to review what you've just done on a big screen, you just throw the memory card into a reader and pop open Vegas. You don't even have to throw the video onto a time line. Vegas just plays it out over HDMI or over HD-SDI."

Storage: Fast and Faster

Fast, affordable digital storage plays a key role in high-performance video production. HD files, after all, consume hard disk space fast. Most productions typically rely on 7,200 rpm or faster SATA drives or stripped RAID arrays to maximize performance. Spotted Eagle, however, has recently discovered the benefits of Intel® Solid State Drives (SSDs). He explained, "I've got a solid-state boot drive on my main editing system in my production trailer. It lets you get to things instantly." Because SSDs have no moving parts, there's no waiting for a mechanical seek-head. When used as boot drives, operating systems initialize faster, applications launch right away, and projects typically load in seconds, not minutes. "SSDs work really well for editing," he added. "And they're so fast for editing images in Adobe Photoshop*."

Sounding Off

Cakewalk SONAR* is Spotted Eagle's go-to digital audio workstation (DAW). SONAR takes advantage of 64-bit systems and comes with a full range of virtual instruments, mixing tools, and mastering effects. He augments SONAR with various third-party plug-ins and external hardware—two areas where Spotted Eagle sees room for improvement.

"On the audio side of things we rely so much on the external hardware and some things become really funky," he said. "I have a number of high-end audio DSP [digital signal processing] cards that accelerate various effects plug-ins like reverb and compressor/limiters. Those cards aren't 64-bit compatible. That suddenly puts the onus back on the DAW. When I'm running multiple channels of audio and playing softsynths at the same time, latency becomes a problem. The last thing you want when you're playing a lead line or chords is for there to be a delay of even a few milliseconds between what you play and when you hear it. And with chords, you don't want to have notes dropping out because you're taxing your system."

Spotted Eagle longs for the day when, as he put it, "computers have an input jack that connects to really high-quality DACs, so all we'll need is a high-end microphone. No other external hardware. No accelerators. No third-party anything. I know that day is coming."

VASST Training

When he's not jumping out of airplanes, producing video, or composing music, Spotted Eagle devotes his time to helping educate users. He frequently tours doing training for Adobe, Apple, and Sony Media Software. In addition, he publishes instructional books and DVDs under the VASST label for the Sundance Media Group.

"It's unfortunate that there are so many misconceptions out there," Spotted Eagle said. "People read about the latest innovations—for example, 24-bit, 192-kHz sampling—and don't realize that there's more to gaining an advantage from using them than just buying one piece of gear. You have to fine-tune your entire system. If you're using low-end, noisy mics with high-definition audio hardware, you're going to be recording really high-quality noise."

Spotted Eagle also feels people need a better understanding of video and audio codecs, another aspect of production. To that end, VASST just completed a training DVD on digital cinematography. "A lot of it deals with the AVC [Advanced Video Coding] codec—how it works, what you need to be aware of, and so on," he said. "VASST is a big part of what we do, and it's grown tremendously."

Fast Forward to the Future

VASST also develops plug-ins for Vegas Pro. "One of them, Mayhem," he said, "applies a filter to titles and grunges them up by slicing out individual frames and either randomly placing them inside of an in-and-out point, or you can deliberately place them inside an in-and-out point. It can create some very unique looks."

Scatter Shot gives Vegas users access to a user-friendly 3D engine. Spotted Eagle elaborated, "Vegas has a very good 3D engine of its own, but it requires users to enter data by the numbers. Scatter Shot gives users an interface that lets them use 3D in Vegas without doing math."

Spotted Eagle stays on top of new technologies, maintaining a working relationship with engineers at various hardware and software companies, including Intel. One emerging technology he's particularly interested in is Intel's 2nd Generation Intel® Core™ processor.

"I'm excited about the 2nd Generation Intel Core processor," Spotted Eagle told us. "It originally looked like the processor was designed to accelerate the gaming experience. I see it doing some pretty incredible things for both the audio and the video production world." ■

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